

Crystal Data: Tetragonal, pseudocubic. *Point Group:* $\bar{4}2m$. Crystals thick tabular, to 1 mm; massive, typically intergrown with other selenides.

Physical Properties: *Cleavage:* {001}, perfect. Hardness = 3–3.5 VHN = 155–252, 204 average (15 g load). D(meas.) = 5.35 D(calc.) = 5.44 Distinctly magnetic.

Optical Properties: Opaque. *Color:* Brass-yellow, tarnishes dark brown to black; in reflected light, brown-yellow or cream-yellow, may show an orange tint. *Luster:* Metallic. *Pleochroism:* Weak, creamy yellow to yellowish brown. *Anisotropism:* Marked, yellowish to tan. R₁–R₂: (400) 22.0–24.5, (420) 24.8–27.9, (440) 26.5–30.1, (460) 27.8–31.8, (480) 28.7–33.1, (500) 29.5–34.2, (520) 30.4–35.0, (540) 31.1–35.6, (560) 31.6–36.0, (580) 32.0–36.2, (600) 32.6–36.4, (620) 33.0–36.6, (640) 33.3–37.0, (660) 33.7–37.5, (680) 33.8–38.1, (700) 34.0–38.7

Cell Data: *Space Group:* $P\bar{4}2c$. $a = 5.518(4)$ $c = 11.048(6)$ $Z = 4$

X-ray Powder Pattern: Petrovice, Czech Republic. 3.186 (10), 1.951 (9), 1.664 (8), 5.52 (7), 1.127 (7), 1.380 (6), 2.470 (5)

Chemistry:	(1)	(2)	(3)
Cu	23.62	22.97	22.91
Fe	19.75	20.70	20.14
Ag		0.05	
Se	55.96	56.35	56.95
S		0.02	
Total	99.32	100.09	100.00

(1) Martin Lake, Canada; by electron microprobe, average of several analyses; corresponding to Cu_{1.06}Fe_{1.01}Se_{2.00}. (2) Petrovice, Czech Republic; by electron microprobe, average of 18 analyses; corresponding to Cu_{1.01}Fe_{1.04}Se_{2.00}. (3) CuFeSe₂.

Polymorphism & Series: Forms a series with chalcopyrite.

Mineral Group: Chalcopyrite group.

Occurrence: In low-temperature hydrothermal vein deposits.

Association: Chalcopyrite, clausthalite, tiemannite, berzelianite, naumannite, umangite, geffroyite, chaméanite, uraninite, ankerite, dolomite.

Distribution: From the Eskeborn adit, Tilkerode, Harz Mountains, Germany [TL]. At the Chaméane uranium mine, near Vernet-la-Varenne, Puy-de-Dôme, France. In the Czech Republic, from Bukov, near Tisnova; in the Petrovice uranium deposit, near Žďar; and the Předbořice uranium deposit, near Krásna Hora; at Slavkovice; and on Koksín Hill, near Mitov. In Argentina, at Cerro de Cacheuta, Mendoza Province; from Sierra de Umango, and at Tuminico, Sierra de Cacho, La Rioja Province. From Martin Lake and the Eagle Group, Lake Athabasca area, Saskatchewan, Canada.

Name: For the Eskeborn adit, Tilkerode, Germany, where first discovered.

Type Material: The Natural History Museum, London, England, 1948,325; Harvard University, Cambridge, Massachusetts, USA, 98902.

References: (1) Ramdohr, P. (1949) Neue Erzminerale. Fortschr. Mineral., 28, 69–70 (in German). (2) Harris, D.C. and E.A.J. Burke (1971) Eskebornite, two Canadian occurrences. Can. Mineral., 10, 786–796. (3) Kvaček, M. (1973) Selenides from the uranium deposits of western Moravia, Czechoslovakia. Part 1. Berzelianite, umangite, eskebornite. Acta. Univ. Carol., Geol., 1-2, 23–36. (4) Johan, Z. (1988) Crystal symmetry of eskebornite, CuFeS₂. Neues Jahrb. Mineral., Monatsh., 337–343. (5) Delgado, et al (1992) ??title?? Mat. Res. Bull., 367 ??str??Strunz?? (6) Criddle, A.J. and C.J. Stanley, Eds. (1993) Quantitative data file for ore minerals, 3rd ed. Chapman & Hall, London, 160.

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